REMARKS

In the Office Action, the Examiner indicated that claims 1 through 15 are pending in the application and the Examiner rejected all claims.

Claim Rejections, 35 U.S.C. §103(a)

At item 2 of the Office Action, the Examiner rejected claims 1-15 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,377,934 to Chen et al. in view of U.S. Patent No. 6,317,722 to Jacobi et al.

The Present Invention

The present invention is a method and system for data mining and analysis in which all of the elements of a transaction, e.g., all of the purchased items in a particular market basket, are characterized in the aggregate according to predetermined attributes. For example, a basket as a whole may be characterized as containing "high margin items"; "perishable goods"; "entertainment-related luxury items", etc. In accordance with the present invention, these attributes are identified and an "imaginary item" is included in the transaction for each market basket grouping that possesses an identified attribute. As described in the specification, an "imaginary item" is not an actual item and does not describe an actual item. Rather, an imaginary item is a designation indicating the existence of a <u>property</u> of the basket as a whole (e.g., the basket contains food items or the basket contains predominantly "high-end" items), which designation is "added" to the basket to enable identification of the property. When the data is subjected to traditional association analysis, the imaginary items are included in the analysis and may be utilized to, for example, identify frequent item sets that are typically found in market basket groupings having the identified characteristics.

U.S. Patent No. 6,377,934 to Chen et al.

Chen teaches techniques for grouping data in a data warehouse: A method of creating a database for organizing information from one or more sources according to a data schema, such as a reverse star schema, which can be selected from a set of pre-defined data model templates. Chen also mentions that the method includes a step of defining entities for transactions and/or events and their attributes, to form a customized group of customer activity components that are relevant to a particular application. Events can be arranged into customer activity components. Components can be organized into one or more customized groups. Chen further mentions that the method provides users with the capability to define application-specific entities in customer activity components, by, for example, selecting attributes from a predefined list of attributes or by defining their own. An embodiment according to the Chen invention can also provide analysis functions of database contents, such as market basket analysis for customer buying behavior.

U.S. Patent No. 6,317,722 to Jacobi et al.

U.S. Patent No. 6,317,722 to Jacobi et al. teaches a computer-implemented service for recommending products or other items to a user based on a set of items known to be of interest to the user, such as a set of items currently in the user's electronic shopping cart. In essence, the Jacobi teaching discloses a computerized version of the well-known concept of "pushing" items that may be of interest to a user by selecting items to be pushed to the user based upon other items they have purchased or shown interest in. Alternatively, the system of Jacobi teaches the pushing of items to potential purchasers based upon correlation between items currently in the consumer's electronic market basket and other items that other purchasers of the same items in the market basket have also purchased. In other words, if a consumer has

in a market basket three books on the subject of house renovation, the system of Jacobi might

present to the purchaser the option of purchasing a fourth book on the same subject.

Alternatively, the Jacobi system might look at the fact that the purchaser has three books on

kitchen renovation in the market basket and then analyze other users who purchased the same

books and identify other items also purchased by the other users and suggest those items to the

current purchaser.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

> To establish a *prima facie* case of obviousness, three basic criteria must be met.
> First, there must be some suggestion or motivation, either in the references
> themselves or in the knowledge generally available to one of ordinary skilled
> in the art, to modify the reference or to combine reference teachings. Second,
> there must be a reasonable expectation of success. Finally, the prior art
> reference (or references when combined) must teach or suggest all the claim
> limitations. MPEP 2143

Neither of the prior art references, either alone or in combination, teach or suggest the

claimed invention.

As indicated in the Response to the previous Office Action, the present invention

introduces the concept of "imaginary items" to provide an analyst or analysis program with

the ability to enhance the analysis of market basket groupings by using aggregate basket

properties along with actual items and their properties in the market basket analysis. The term

"imaginary item" is clearly defined in the present specification, beginning at the bottom of

page 15 and carrying over onto page 16. Specifically, an imaginary item is a designation

indicating the existence of a particular property, which designation is "added" to the basket

to identify this property as a characteristic of the basket. They enhance the market basket data

by categorizing the market basket as possessing the designated property. No actual items are

added to the basket or presented to the user based upon the characterization of the basket and the embedding of the imaginary item in the basket. Further, as set forth on page 16 of the specification, the imaginary items are deliberately identified using a different code so that they can be distinguished from data identifying real items.

The claims of the present invention clearly recite, among other things, the embedding of the imaginary item in the aggregate sales data for market basket groupings (e.g., claim 1, "for all market basket groupings which have been determined to display [particular] characteristics, enhancing said aggregate sales data concerning each market basket grouping by embedding said aggregate sales data and "imaginary item" for each characteristic(s) displayed by each market basket grouping".).

Neither Chen nor Jacobi teach or suggest this feature. The Examiner acknowledges that Chen does not include this feature; with regard to Jacobi, the Examiner asserts that Jacobi somehow teaches the concept of imaginary items as defined in the specification, but makes no citation to the Jacobi reference in support of this assertion. In fact, Jacobi is devoid of any teaching of such a concept. At best, Jacobi teaches the identification of characteristics which could be used with the present invention to create an imaginary item; however, Jacobi simply says that if a market basket possesses a particular characteristic, then the purchaser who owns the market basket will be presented with a recommendation to purchase a particular item or items based upon these characteristics. Nowhere in Jacobi is there a suggestion of embedding data in the market basket so that it will possess data indicating these characteristics, which data is then used by analysts to identify items that might be desired by particular groupings of purchasers.

Without teaching or suggestion, it is improper to reject the claims based upon Chen or Jacobi, either alone or in combination.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited. The Examiner is invited to contact Applicant's undersigned counsel by telephone call in order to further the prosecution of this case in any way.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0629.

Respectfully submitted,

1/30/03
Date

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